

## Official Amendment

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

### Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the present application:

1. (Currently Amended) A solid corrosion-inhibiting conversion coating formed on a substrate metal, the conversion coating comprising a rare earth element and an inorganic valence stabilizer combined to form a rare earth/valence stabilizer complex within the solid corrosion-inhibiting conversion coating, wherein the rare earth element is selected from cerium, praseodymium, terbium, or a combination thereof, and at least one rare earth element is in the tetravalent oxidation state in the rare earth/valence stabilizer complex in the solid corrosion-inhibiting conversion coating, ~~and wherein the valence stabilizer consists essentially of an inorganic valence stabilizer.~~
2. (Original) The conversion coating of claim 1 wherein the rare earth/valence stabilizer complex has a solubility in water of between about  $5 \times 10^{-1}$  and about  $1 \times 10^{-5}$  moles per liter of cerium, praseodymium, or terbium at about 25°C and about 760 Torr.
3. (Original) The conversion coating of claim 2 wherein the solubility of the rare earth/valence stabilizer complex in water is between about  $5 \times 10^{-2}$  and about  $5 \times 10^{-5}$  moles per liter of cerium, praseodymium, or terbium at about 25°C and about 760 Torr.
4. (Original) The conversion coating of claim 1 wherein there is an electrostatic barrier layer around the rare earth/valence stabilizer complex in aqueous solution.
5. (Original) The conversion coating of claim 1 wherein the rare earth/valence stabilizer complex acts as an ion exchange agent towards corrosive ions.

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

6. (Original) The conversion coating of claim 1 wherein the conversion coating is between about 25 and about 10,000 nanometers thick.
7. (Original) The conversion coating of claim 6 wherein the conversion coating is between about 100 and about 500 nanometers thick.
8. (Original) The conversion coating of claim 1 wherein the conversion coating has a morphology which enhances adhesion of a coating applied over the conversion coating.
9. (Original) The conversion coating of claim 1 wherein the rare earth/valence stabilizer complex has a central cavity containing a cerium, praseodymium, or terbium ion and an additional ion.
10. (Original) The conversion coating of claim 9 wherein the additional ion is  $B^{+3}$ ,  $Al^{+3}$ ,  $Si^{+4}$ ,  $P^{+5}$ ,  $Ti^{+4}$ ,  $V^{+5}$ ,  $V^{+4}$ ,  $Cr^{+6}$ ,  $Cr^{+3}$ ,  $Mn^{+4}$ ,  $Mn^{+3}$ ,  $Mn^{+2}$ ,  $Fe^{+3}$ ,  $Fe^{+2}$ ,  $Co^{+2}$ ,  $Co^{+3}$ ,  $Ni^{+2}$ ,  $Ni^{+3}$ ,  $Ni^{+4}$ ,  $Cu^{+2}$ ,  $Cu^{+3}$ ,  $Zn^{+2}$ ,  $Ga^{+3}$ ,  $Ge^{+4}$ ,  $As^{+5}$ ,  $As^{+3}$ , or  $Zr^{+4}$ .
11. (Canceled)
12. (Previously Presented) The conversion coating of claim 1 wherein the inorganic valence stabilizer is selected from molybdates, tungstates, vanadates, niobates, tantalates, tellurates, periodates, iodates, carbonates, antimonates, stannates, phosphates, nitrates, bromates, sulfates, titanates, zirconates, bismuthates, germanates, arsenates, selenates, borates, aluminates, silicates, or combinations thereof.

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

13. (Original) The conversion coating of claim 12 wherein the valence stabilizer is the inorganic valence stabilizer selected from molybdates, tungstates, vanadates, niobates, tantalates, tellurates, periodates, iodates, carbonates, antimonates, stannates, phosphates, nitrates, bromates, sulfates, or combinations thereof.

14-36. (Canceled)

37. (Previously Presented) The conversion coating of claim 1 wherein the rare earth/valence stabilizer complex further comprises a solubility control agent.

38. (Original) The conversion coating of claim 37 wherein the solubility control agent is a cationic solubility control agent or an anionic solubility control agent.

39. (Original) The conversion coating of claim 38 wherein the solubility control agent is the cationic solubility control agent selected from  $H^+$ ;  $Li^+$ ;  $Na^+$ ;  $K^+$ ;  $Rb^+$ ;  $Cs^+$ ;  $NH_4^+$ ;  $Mg^{+2}$ ;  $Ca^{+2}$ ;  $Sr^{+2}$ ;  $Be^{+2}$ ;  $Ba^{+2}$ ;  $Y^{+3}$ ;  $La^{+3}$ ;  $Ce^{+3}$ ;  $Ce^{+4}$ ;  $Nd^{+3}$ ;  $Pr^{+3}$ ;  $Sc^{+3}$ ;  $Sm^{+3}$ ;  $Eu^{+3}$ ;  $Eu^{+2}$ ;  $Gd^{+3}$ ;  $Tb^{+3}$ ;  $Dy^{+3}$ ;  $Ho^{+3}$ ;  $Er^{+3}$ ;  $Tm^{+3}$ ;  $Yb^{+3}$ ;  $Lu^{+3}$ ;  $Ti^{+4}$ ;  $Zr^{+4}$ ;  $Ti^{+3}$ ;  $Hf^{+4}$ ;  $Nb^{+5}$ ;  $Ta^{+5}$ ;  $Nb^{+4}$ ;  $Ta^{+4}$ ;  $V^{+5}$ ;  $V^{+4}$ ;  $V^{+3}$ ;  $Mo^{+6}$ ;  $W^{+6}$ ;  $Mo^{+5}$ ;  $W^{+5}$ ;  $Mo^{+4}$ ;  $W^{+4}$ ;  $Cr^{+3}$ ;  $Mn^{+2}$ ;  $Mn^{+3}$ ;  $Mn^{+4}$ ;  $Fe^{+2}$ ;  $Fe^{+3}$ ;  $Co^{+2}$ ;  $Co^{+3}$ ;  $Ni^{+2}$ ;  $Ni^{+3}$ ;  $Ni^{+4}$ ;  $Ru^{+2}$ ;  $Ru^{+3}$ ;  $Ru^{+4}$ ;  $Rh^{+3}$ ;  $Ir^{+3}$ ;  $Rh^{+2}$ ;  $Ir^{+2}$ ;  $Pd^{+4}$ ;  $Pt^{+4}$ ;  $Pd^{+2}$ ;  $Pt^{+2}$ ;  $Os^{+4}$ ;  $Cu^+$ ;  $Cu^{+2}$ ;  $Cu^{+3}$ ;  $Ag^+$ ;  $Ag^{+2}$ ;  $Ag^{+3}$ ;  $Au^+$ ;  $Au^{+2}$ ;  $Au^{+3}$ ;  $Zn^{+2}$ ;  $Cd^{+2}$ ;  $Hg^+$ ;  $Hg^{+2}$ ;  $Al^{+3}$ ;  $Ga^{+3}$ ;  $Ga^+$ ;  $In^{+3}$ ;  $In^+$ ;  $Tl^{+3}$ ;  $Tl^+$ ;  $Ge^{+4}$ ;  $Ge^{+2}$ ;  $Sn^{+4}$ ;  $Sn^{+2}$ ;  $Pb^{+4}$ ;  $Pb^{+2}$ ;  $Sb^{+3}$ ;  $Sb^{+5}$ ;  $As^{+3}$ ;  $As^{+5}$ ;  $Bi^{+3}$ ;  $Bi^{+5}$ ; organic compounds containing at least one  $N^+$  site; organic compounds containing at least one phosphonium site; organic compounds containing at least one arsonium site; organic compounds containing at least one stibonium site; organic compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site; organic compounds containing at least one selenonium site; organic compounds containing at least one iodonium site; quaternary ammonium compounds having a

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

formula  $\text{NR}_4^+$ , where R is an alkyl, aromatic, or acyclic organic constituent; or combinations thereof.

40. (Original) The conversion coating of claim 39 wherein the cationic solubility control agent is selected from  $\text{H}^+$ ;  $\text{Li}^+$ ;  $\text{Na}^+$ ;  $\text{K}^+$ ;  $\text{Rb}^+$ ;  $\text{Cs}^+$ ;  $\text{NH}_4^+$ ;  $\text{Mg}^{+2}$ ;  $\text{Ca}^{+2}$ ;  $\text{Sr}^{+2}$ ;  $\text{Y}^{+3}$ ;  $\text{La}^{+3}$ ;  $\text{Ce}^{+3}$ ;  $\text{Ce}^{+4}$ ;  $\text{Nd}^{+3}$ ;  $\text{Pr}^{+3}$ ;  $\text{Sc}^{+3}$ ;  $\text{Sm}^{+3}$ ;  $\text{Eu}^{+3}$ ;  $\text{Eu}^{+2}$ ;  $\text{Gd}^{+3}$ ;  $\text{Tb}^{+3}$ ;  $\text{Dy}^{+3}$ ;  $\text{Ho}^{+3}$ ;  $\text{Er}^{+3}$ ;  $\text{Tm}^{+3}$ ;  $\text{Yb}^{+3}$ ;  $\text{Lu}^{+3}$ ;  $\text{Ti}^{+4}$ ;  $\text{Zr}^{+4}$ ;  $\text{Ti}^{+3}$ ;  $\text{Hf}^{+4}$ ;  $\text{Nb}^{+5}$ ;  $\text{Ta}^{+5}$ ;  $\text{Nb}^{+4}$ ;  $\text{Ta}^{+4}$ ;  $\text{Mo}^{+6}$ ;  $\text{W}^{+6}$ ;  $\text{Mo}^{+5}$ ;  $\text{W}^{+5}$ ;  $\text{Mo}^{+4}$ ;  $\text{W}^{+4}$ ;  $\text{Mn}^{+2}$ ;  $\text{Mn}^{+3}$ ;  $\text{Mn}^{+4}$ ;  $\text{Fe}^{+2}$ ;  $\text{Fe}^{+3}$ ;  $\text{Co}^{+2}$ ;  $\text{Co}^{+3}$ ;  $\text{Ru}^{+2}$ ;  $\text{Ru}^{+3}$ ;  $\text{Ru}^{+4}$ ;  $\text{Rh}^{+3}$ ;  $\text{Ir}^{+3}$ ;  $\text{Rh}^{+2}$ ;  $\text{Ir}^{+2}$ ;  $\text{Pd}^{+4}$ ;  $\text{Pt}^{+4}$ ;  $\text{Pd}^{+2}$ ;  $\text{Pt}^{+2}$ ;  $\text{Cu}^+$ ;  $\text{Cu}^{+2}$ ;  $\text{Cu}^{+3}$ ;  $\text{Ag}^+$ ;  $\text{Ag}^{+2}$ ;  $\text{Ag}^{+3}$ ;  $\text{Au}^+$ ;  $\text{Au}^{+2}$ ;  $\text{Au}^{+3}$ ;  $\text{Zn}^{+2}$ ;  $\text{Al}^{+3}$ ;  $\text{Ga}^{+3}$ ;  $\text{Ga}^+$ ;  $\text{In}^{+3}$ ;  $\text{In}^+$ ;  $\text{Ge}^{+4}$ ;  $\text{Ge}^{+2}$ ;  $\text{Sn}^{+4}$ ;  $\text{Sn}^{+2}$ ;  $\text{Sb}^{+3}$ ;  $\text{Sb}^{+5}$ ;  $\text{Bi}^{+3}$ ;  $\text{Bi}^{+5}$ ; organic compounds containing at least one  $\text{N}^+$  site; organic compounds containing at least one phosphonium site; organic compounds containing at least one stibonium site; organic compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site; organic compounds containing at least one iodonium site; quaternary ammonium compounds having a formula  $\text{NR}_4^+$ , where R is an alkyl, aromatic, or acyclic organic constituent; or combinations thereof.

41. (Withdrawn) The conversion coating of claim 38 wherein the solubility control agent is the anionic solubility control agent selected from fluorotitanates, chlorotitanates, fluorozirconates, chlorozirconates, fluoroniobates, chloroniobates, fluorotantalates, chlorotantalates, molybdates, tungstates, permanganates, fluoromanganates, chloromanganates, fluoroferrates, chloroferrates, fluorocobaltates, chlorocobaltates, fluorozincates, chlorozincates, borates, fluoroborates, fluoroaluminates, chloroaluminates, carbonates, silicates, fluorosilicates, fluorostannates, nitrates, nitrites, azides, cyanamides, phosphates, phosphites, phosphonates, phosphinites, thiophosphates, thiophosphites, thiophosphonates, thiophosphinites, fluorophosphates, fluoroantimonates, chloroantimonates, sulfates, sulfites, sulfonates, thiosulfates, dithionites, dithionates, fluorosulfates, tellurates, fluorides, chlorides, chlorates, perchlorates, bromides, bromates, iodides, iodates, periodates, heteropolyanions, ferricyanides, ferrocyanides,

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

cyanocobaltates, cyanocuprates, cyanomanganates, cyanates, cyanatoferrates, cyanatocobaltates, cyanatocuprates, cyanatomanganates, thiocyanates, thiocyanatoferrates, thiocyanatocobaltates, thiocyanatocuprates, thiocyanatomanganates, cyanamides, cyanamidoferrates, cyanamidocobaltates, cyanamidocuprates, cyanamidomanganates, nitritoferrates, nitritocobaltates, azides, (thio)carboxylates, di(thio)carboxylates, tri(thio)carboxylates, tetra(thio)carboxylates, (thio)phenolates, di(thio)phenolates, tri(thio)phenolates, tetra(thio)phenolates, (thio)phosphonates, di(thio)phosphonates, tri(thio)phosphonates, (thio)phosphonamides, di(thio)phosphonamides, tri(thio)phosphonamides, amino(thio)phosphonates, diamino(thio)phosphonates, triamino(thio)phosphonates, imino(thio)phosphonates, diimino(thio)phosphonates, (thio)sulfonates, di(thio)sulfonates, tri(thio)sulfonates, (thio)sulfonamides, di(thio)sulfonamides, tri(thio)sulfonamides, amino(thio)sulfonates, diamino(thio)sulfonates, triamino(thio)sulfonates, imino(thio)sulfonates, diimino(thio)sulfonates, (thio)borates, di(thio)borates, (thio)boronates, organic silicates, stibonates, cyanides, cyanochromates, cyanonickelates, cyanatochromates, cyanatonickelates, thiocyanatochromates, thiocyanatonickelates, cyanamidochromates, cyanamidonickelates, nitritonickelates, arsonates, diarsonates, triarsonates, organic selenates, diselenates, triselenates, arsenates, arsenites, fluoroarsenates, chloroarsenates, selenates, selenites, fluorothallates, chlorothallates, iodo mercury anions, chloromercurates, bromomercurates, osmates, fluoronickelates, chromates, Reinecke's salt, vanadates, or combinations thereof.

42. (Withdrawn) The conversion coating of claim 41 wherein the anionic solubility control agent is selected from fluorotitanates, chlorotitanates, fluoro zirconates, chlorozirconates, fluoroniobates, chloroniobates, fluorotantalates, chlorotantalates, molybdates, tungstates, permanganates, fluoromanganates, chloromanganates, fluoroferrates, chloroferrates, fluorocobaltates, chlorocobaltates, fluorozincates, chlorozincates, borates, fluoroborates, fluoroaluminates, chloroaluminates, carbonates, silicates, fluorosilicates, fluorostannates, nitrates, nitrites, azides, cyanamides, phosphates, phosphites, phosphonates, phosphinites,

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

thiophosphates, thiophosphites, thiophosphonates, thiophosphinites, fluorophosphates, fluoroantimonates, chloroantimonates, sulfates, sulfites, sulfonates, thiosulfates, dithionites, dithionates, fluorosulfates, tellurates, fluorides, chlorides, chlorates, perchlorates, bromides, bromates, iodides, iodates, periodates, heteropolyanions, ferricyanides, ferrocyanides, cyanocobaltates, cyanocuprates, cyanomanganates, cyanates, cyanatoferrates, cyanatocobaltates, cyanatocuprates, cyanatomanganates, thiocyanates, thiocyanatoferrates, thiocyanatocobaltates, thiocyanatocuprates, thiocyanatomanganates, cyanamides, cyanamidoferrates, cyanamidocobaltates, cyanamidocuprates, cyanamidomanganates, nitritoferrates, nitritocobaltates, azides, (thio)carboxylates, di(thio)carboxylates, tri(thio)carboxylates, tetra(thio)carboxylates, (thio)phenolates, di(thio)phenolates, tri(thio)phenolates, tetra(thio)phenolates, (thio)phosphonates, di(thio)phosphonates, tri(thio)phosphonates, (thio)phosphonamides, di(thio)phosphonamides, tri(thio)phosphonamides, amino(thio)phosphonates, diamino(thio)phosphonates, triamino(thio)phosphonates, imino(thio)phosphonates, diimino(thio)phosphonates, (thio)sulfonates, di(thio)sulfonates, tri(thio)sulfonates, (thio)sulfonamides, di(thio)sulfonamides, tri(thio)sulfonamides, amino(thio)sulfonates, diamino(thio)sulfonates, triamino(thio)sulfonates, imino(thio)sulfonates, diimino(thio)sulfonates, (thio)borates, di(thio)borates, (thio)boronates, organic silicates, stibonates, or combinations thereof.

43. (Original) The conversion coating of claim 1 wherein the conversion coating is colored.

44. (Original) The conversion coating of claim 43 further comprising an agent which improves color-fastness of the conversion coating.

45. (Original) The conversion coating of claim 44 wherein the agent which improves color-fastness is selected from an active UV blocker, a passive UV blocker, a brightener, or a combination thereof.

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

46. (Original) The conversion coating of claim 45 wherein the agent which improves color-fastness is the active UV blocker selected from carbon black, graphite, phthalocyanines, or combinations thereof.

47. (Original) The conversion coating of claim 45 wherein the agent which improves color-fastness is the passive UV blocker selected from titanium oxide, tin oxide, lead oxide, silicon oxide, silicates, aluminosilicates, or combinations thereof.

48. (Original) The conversion coating of claim 45 wherein the agent which improves color-fastness is the brightener selected from sulfonic acids, sulfonates, sulfonamides, sulfinic acids, sulfinates, sulfones, cyanides, nonionic surfactants, or combinations thereof.

49. (Original) The conversion coating of claim 43 wherein the color is formed by a dye selected from vat dyes, mordant dyes, lake dyes, disperse dyes, azo dyes, triazene dyes, triphenylmethane dyes, azine dyes, formazan dyes, phthalocyanine dyes, Schiff Base dyes, naturally-occurring dyes, inorganic pigments, or combinations thereof.

50-162 (Canceled)

163. (Currently Amended) A solid corrosion-inhibiting conversion coating formed on a substrate metal, the conversion coating comprising a rare earth element and an inorganic valence stabilizer combined to form a rare earth/valence stabilizer complex within the solid corrosion-inhibiting conversion coating, wherein

the rare earth element is selected from cerium, praseodymium, terbium, or a combination thereof,

at least one rare earth element is in the tetravalent oxidation state in the rare earth/valence stabilizer complex in the solid corrosion-inhibiting conversion coating, and

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

the rare earth/valence stabilizer complex is sparingly soluble in water at about 25°C and about 760 Torr, ~~and wherein the valence stabilizer consists essentially of an inorganic valence stabilizer.~~

164. (Canceled)

165. (Previously Presented) A solid corrosion-inhibiting conversion coating formed on a substrate metal, the conversion coating comprising a rare earth element and a valence stabilizer combined to form a rare earth/valence stabilizer complex within the solid corrosion-inhibiting conversion coating, wherein the rare earth element is selected from cerium, praseodymium, terbium, or a combination thereof, and at least one rare earth element is in the tetravalent oxidation state, wherein the rare earth/valence stabilizer complex has a central cavity containing a cerium, praseodymium, or terbium ion and an additional ion, wherein the additional ion is  $B^{+3}$ ,  $Al^{+3}$ ,  $Si^{+4}$ ,  $P^{+5}$ ,  $Ti^{+4}$ ,  $V^{+5}$ ,  $V^{+4}$ ,  $Cr^{+6}$ ,  $Cr^{+3}$ ,  $Mn^{+4}$ ,  $Mn^{+3}$ ,  $Mn^{+2}$ ,  $Fe^{+3}$ ,  $Fe^{+2}$ ,  $Co^{+2}$ ,  $Co^{+3}$ ,  $Ni^{+2}$ ,  $Ni^{+3}$ ,  $Ni^{+4}$ ,  $Cu^{+2}$ ,  $Cu^{+3}$ ,  $Zn^{+2}$ ,  $Ga^{+3}$ ,  $Ge^{+4}$ ,  $As^{+5}$ ,  $As^{+3}$ , or  $Zr^{+4}$ .

166. (Previously Presented) The conversion coating of claim 165 wherein the rare earth/valence stabilizer complex has a solubility in water of between about  $5 \times 10^{-1}$  and about  $1 \times 10^{-5}$  moles per liter of cerium, praseodymium, or terbium at about 25°C and about 760 Torr.

167. (Previously Presented) The conversion coating of claim 166 wherein the solubility of the rare earth/valence stabilizer complex in water is between about  $5 \times 10^{-2}$  and about  $5 \times 10^{-5}$  moles per liter of cerium, praseodymium, or terbium at about 25°C and about 760 Torr.

168. (Previously Presented) The conversion coating of claim 165 wherein there is an electrostatic barrier layer around the rare earth/valence stabilizer complex in aqueous solution.



**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

169. (Previously Presented) The conversion coating of claim 165 wherein the rare earth/valence stabilizer complex acts as an ion exchange agent towards corrosive ions.

170. (Previously Presented) The conversion coating of claim 165 wherein the conversion coating is between about 25 and about 10,000 nanometers thick.

171. (Previously Presented) The conversion coating of claim 170 wherein the conversion coating is between about 100 and about 500 nanometers thick.

172. (Previously Presented) The conversion coating of claim 165 wherein the conversion coating has a morphology which enhances adhesion of a coating applied over the conversion coating.

173. (Previously Presented) The conversion coating of claim 165 wherein the valence stabilizer is an inorganic valence stabilizer selected from molybdates, tungstates, vanadates, niobates, tantalates, tellurates, periodates, iodates, carbonates, antimonates, stannates, phosphates, nitrates, bromates, sulfates, titanates, zirconates, bismuthates, germanates, arsenates, selenates, borates, aluminates, silicates, or combinations thereof.

174. (Previously Presented) The conversion coating of claim 173 wherein the valence stabilizer is the inorganic valence stabilizer selected from molybdates, tungstates, vanadates, niobates, tantalates, tellurates, periodates, iodates, carbonates, antimonates, stannates, phosphates, nitrates, bromates, sulfates, or combinations thereof.

175. (Previously Presented) The conversion coating of claim 165 wherein the rare earth/valence stabilizer complex further comprises a solubility control agent.

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

176. (Previously Presented) The conversion coating of claim 175 wherein the solubility control agent is a cationic solubility control agent or an anionic solubility control agent.

177. (Previously Presented) The conversion coating of claim 176 wherein the solubility control agent is the cationic solubility control agent selected from  $H^+$ ;  $Li^+$ ;  $Na^+$ ;  $K^+$ ;  $Rb^+$ ;  $Cs^+$ ;  $NH_4^+$ ;  $Mg^{+2}$ ;  $Ca^{+2}$ ;  $Sr^{+2}$ ;  $Be^{+2}$ ;  $Ba^{+2}$ ;  $Y^{+3}$ ;  $La^{+3}$ ;  $Ce^{+3}$ ;  $Ce^{+4}$ ;  $Nd^{+3}$ ;  $Pr^{+3}$ ;  $Sc^{+3}$ ;  $Sm^{+3}$ ;  $Eu^{+3}$ ;  $Eu^{+2}$ ;  $Gd^{+3}$ ;  $Tb^{+3}$ ;  $Dy^{+3}$ ;  $Ho^{+3}$ ;  $Er^{+3}$ ;  $Tm^{+3}$ ;  $Yb^{+3}$ ;  $Lu^{+3}$ ;  $Ti^{+4}$ ;  $Zr^{+4}$ ;  $Ti^{+3}$ ;  $Hf^{+4}$ ;  $Nb^{+5}$ ;  $Ta^{+5}$ ;  $Nb^{+4}$ ;  $Ta^{+4}$ ;  $V^{+5}$ ;  $V^{+4}$ ;  $V^{+3}$ ;  $Mo^{+6}$ ;  $W^{+6}$ ;  $Mo^{+5}$ ;  $W^{+5}$ ;  $Mo^{+4}$ ;  $W^{+4}$ ;  $Cr^{+3}$ ;  $Mn^{+2}$ ;  $Mn^{+3}$ ;  $Mn^{+4}$ ;  $Fe^{+2}$ ;  $Fe^{+3}$ ;  $Co^{+2}$ ;  $Co^{+3}$ ;  $Ni^{+2}$ ;  $Ni^{+3}$ ;  $Ni^{+4}$ ;  $Ru^{+2}$ ;  $Ru^{+3}$ ;  $Ru^{+4}$ ;  $Rh^{+3}$ ;  $Ir^{+3}$ ;  $Rh^{+2}$ ;  $Ir^{+2}$ ;  $Pd^{+4}$ ;  $Pt^{+4}$ ;  $Pd^{+2}$ ;  $Pt^{+2}$ ;  $Os^{+4}$ ;  $Cu^+$ ;  $Cu^{+2}$ ;  $Cu^{+3}$ ;  $Ag^+$ ;  $Ag^{+2}$ ;  $Ag^{+3}$ ;  $Au^+$ ;  $Au^{+2}$ ;  $Au^{+3}$ ;  $Zn^{+2}$ ;  $Cd^{+2}$ ;  $Hg^+$ ;  $Hg^{+2}$ ;  $Al^{+3}$ ;  $Ga^{+3}$ ;  $Ga^+$ ;  $In^{+3}$ ;  $In^+$ ;  $Tl^{+3}$ ;  $Tl^+$ ;  $Ge^{+4}$ ;  $Ge^{+2}$ ;  $Sn^{+4}$ ;  $Sn^{+2}$ ;  $Pb^{+4}$ ;  $Pb^{+2}$ ;  $Sb^{+3}$ ;  $Sb^{+5}$ ;  $As^{+3}$ ;  $As^{+5}$ ;  $Bi^{+3}$ ;  $Bi^{+5}$ ; organic compounds containing at least one  $N^+$  site; organic compounds containing at least one phosphonium site; organic compounds containing at least one arsonium site; organic compounds containing at least one stibonium site; organic compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site; organic compounds containing at least one selenonium site; organic compounds containing at least one iodonium site; quaternary ammonium compounds having a formula  $NR_4^+$ , where R is an alkyl, aromatic, or acyclic organic constituent; or combinations thereof.

178. (Previously Presented) The conversion coating of claim 177 wherein the cationic solubility control agent is selected from  $H^+$ ;  $Li^+$ ;  $Na^+$ ;  $K^+$ ;  $Rb^+$ ;  $Cs^+$ ;  $NH_4^+$ ;  $Mg^{+2}$ ;  $Ca^{+2}$ ;  $Sr^{+2}$ ;  $Y^{+3}$ ;  $La^{+3}$ ;  $Ce^{+3}$ ;  $Ce^{+4}$ ;  $Nd^{+3}$ ;  $Pr^{+3}$ ;  $Sc^{+3}$ ;  $Sm^{+3}$ ;  $Eu^{+3}$ ;  $Eu^{+2}$ ;  $Gd^{+3}$ ;  $Tb^{+3}$ ;  $Dy^{+3}$ ;  $Ho^{+3}$ ;  $Er^{+3}$ ;  $Tm^{+3}$ ;  $Yb^{+3}$ ;  $Lu^{+3}$ ;  $Ti^{+4}$ ;  $Zr^{+4}$ ;  $Ti^{+3}$ ;  $Hf^{+4}$ ;  $Nb^{+5}$ ;  $Ta^{+5}$ ;  $Nb^{+4}$ ;  $Ta^{+4}$ ;  $Mo^{+6}$ ;  $W^{+6}$ ;  $Mo^{+5}$ ;  $W^{+5}$ ;  $Mo^{+4}$ ;  $W^{+4}$ ;  $Mn^{+2}$ ;  $Mn^{+3}$ ;  $Mn^{+4}$ ;  $Fe^{+2}$ ;  $Fe^{+3}$ ;  $Co^{+2}$ ;  $Co^{+3}$ ;  $Ru^{+2}$ ;  $Ru^{+3}$ ;  $Ru^{+4}$ ;  $Rh^{+3}$ ;  $Ir^{+3}$ ;  $Rh^{+2}$ ;  $Ir^{+2}$ ;  $Pd^{+4}$ ;  $Pt^{+4}$ ;  $Pd^{+2}$ ;  $Pt^{+2}$ ;  $Cu^+$ ;  $Cu^{+2}$ ;  $Cu^{+3}$ ;  $Ag^+$ ;  $Ag^{+2}$ ;  $Ag^{+3}$ ;  $Au^+$ ;  $Au^{+2}$ ;  $Au^{+3}$ ;  $Zn^{+2}$ ;  $Al^{+3}$ ;  $Ga^{+3}$ ;  $Ga^+$ ;  $In^{+3}$ ;  $In^+$ ;  $Ge^{+4}$ ;  $Ge^{+2}$ ;  $Sn^{+4}$ ;  $Sn^{+2}$ ;  $Sb^{+3}$ ;  $Sb^{+5}$ ;  $Bi^{+3}$ ;  $Bi^{+5}$ ; organic compounds containing at least one  $N^+$  site; organic compounds containing at least one phosphonium site; organic compounds containing at least one

**Official Amendment**

Serial No. – 10/625,915

Docket No. – UVD 0280 IA / UD 268

stibonium site; organic compounds containing at least one oxonium site; organic compounds containing at least one sulfonium site; organic compounds containing at least one iodonium site; quaternary ammonium compounds having a formula  $NR_4^+$ , where R is an alkyl, aromatic, or acyclic organic constituent; or combinations thereof.

179. (Previously Presented) The conversion coating of claim 165 wherein the conversion coating is colored.

180. (Previously Presented) The conversion coating of claim 179 further comprising an agent which improves color-fastness of the conversion coating.

181. (Previously Presented) The conversion coating of claim 180 wherein the agent which improves color-fastness is selected from an active UV blocker, a passive UV blocker, a brightener, or a combination thereof.

182. (Previously Presented) The conversion coating of claim 181 wherein the agent which improves color-fastness is the active UV blocker selected from carbon black, graphite, phthalocyanines, or combinations thereof.